

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. The specification has been amended and new Figures 7 and 8 have been added (See attached Proposed Changes to Drawings). Claim 1 has also been amended. Support for the amendments to claim 1 can be found at page 6, lines 6-17 and Figures 1, 2, 7 and 8 of the present specification. Changes made to the application by the current amendment are shown in the attached "Version With Markings to Show Changes Made."

Objections and § 112 Issues

Figures 7 and 8 have been added to clearly illustrate the features recited in claim 3 without introducing new matter. The specification has also been amended to reference new Figures 7 and 8. Applicants respectfully request withdrawal of the objection to the drawings.

Claim 3 was rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the specification. As mentioned above, Figures 7 and 8 have been added along with the description of those figures in the specification. Applicants submit that the limitations of claim 3 are fully supported by the disclosure of the application. Withdrawal of the objection is respectfully requested.

Claims 1-3 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 1 has been amended to provide antecedent basis and is now definite.

The above referenced changes have been made to address formality issues only, and therefore should not be construed as limiting.

35 U.S.C. § 103 Rejection

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 7-83290 ("the '290 reference"). Applicants respectfully traverse this rejection.

The '290 reference fails to disclose an "elastic roller having a width along an axis of the roller assembly, which is 13 to 45% of an overall width of the roller assembly along the axis thereof, and the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being larger than a thickness of the rigid roller by 5 to 25% of the thickness of

the elastic roller," as required by claim 1. The specific width ratio ranges recited in claim 1 are required in order to ensure a sufficient noise suppression while maintaining the necessary durability of the roller chain (see pages 9-12 of the present specification).

The '290 reference states that an annular cushion member 16 made of rubber or synthetic resin has an outside diameter larger than the outside diameter of a roller and an inside diameter slightly larger than the outside diameter of a bushing so that the cushion member 16 is rotatable around the bushing 12. The width $W2$ of the cushion member 16 is dimensioned to satisfy the expressions:

$$W2 < W1 - L; L + W2 = T2$$

where $W1$ is the distance between inner link plates (13, 13), L is the length of the roller 15, and $T2$ is the effective width of the bottom $S2$ of a sprocket tooth $S1$.

However, the '290 reference fails to disclose or suggest the width of the cushion member 16 and a roller assembly that is composed of the roller 15 and the cushion member 16 disposed coaxially end to end. Furthermore, the '290 reference is completely silent as to the extent to which the cushion member 16 is larger in thickness than the roller 15.

In rejecting claim 1, the Examiner relies on approximate dimensions of roller chain parts disclosed by the '290 reference, including the annular cushion member 16 and the roller 15 shown in the drawings. However, Applicants note that unlike the manufacturing drawings used for making the roller chain parts, patent drawings do not require dimensionally accurate drawings for which individual part dimensions or relative comparisons of part dimensions can be measured or relied upon. Thus, the rejection of claim 1 based on the dimensions illustrated in the '290 reference is improper and the '290 reference fails to disclose or suggest every limitation of claims 1 and 2.

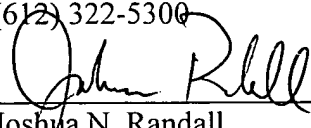
In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

Respectfully submitted,



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MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 322-5300



Joshua N. Randall
Reg. No. 50,719
JNR:PSTdb:ae

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Drawings

New Figures 7 and 8 have been added as shown in the attached Proposed Changes to the Drawings.

In the Specification

The brief description of Figures 5 and 6 on page 6, lines 10-15 has been replaced with the following new description:

FIG. 5 is a graph showing the relation between the durability index and the proportion of width of the elastic rollers of the roller chain; [and]

FIG. 6 is a graph showing the relation between the durability index and the amount of elastic deformation of the elastic rollers of the roller chain[.];

The brief description of Figures 7 and 8 on page 6, after line 15 of the specification has been added to as follows:

FIG. 7 is a fragmentary plan view of a low noise chain according to a modification of the present invention; and

FIG. 8 is an enlarged view of a part of FIG. 7.

The paragraph beginning at page 6, line 26 of the specification has been replaced with the following new paragraph:

It will be appreciated that the length of the roller chain 10 comprises more than two longitudinal portions of uniform lengths, and the zigzag pattern of the elastic rollers 18 in one longitudinal chain portion is opposite in phase to the zigzag pattern of the elastic rollers 18 in the adjacent longitudinal chain portion. In FIGS. 7 and 8, one longitudinal chain portion and the adjacent longitudinal chain portion of the roller chain 10 are designated by CH1 and CH2, respectively.

In the Claims

Claim 1 has been amended as follows:

1. (Amended) A low noise roller chain comprising:

inner and outer links alternately arranged and articulately connected together in a longitudinal direction of the roller chain,

the inner links each having a bushing and a pair of inner plates connected to opposite ends of the bushing, respectively,

the outer links each having a pin and a pair of outer plates connected to opposite ends of the pin, respectively, the pin extending through the bushing; and

a rigid roller made of metal and an elastic roller made of elastic material that are arranged end to end and fitted on the bushing so as to jointly form a roller assembly,

the elastic roller having a width along [the] an axis of the roller assembly, which is 13 to 45% of [the] an overall width of the roller assembly along the axis thereof, and

the elastic roller having a uniform thickness throughout the width thereof, the thickness of the elastic roller being[, which is] larger than [the] a thickness of the rigid roller by 5 to 25% of the thickness of the elastic roller.